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ABSTRACT

A literature survey of more than 800 sources, approximately 140 of which were judged to be relevant, assessed problems Alaska Natives and American Indians experience in learning English language skills required for survival and success in a modern, technological culture. Since the survey was to guide the adaptation and development of instructional materials for elementary and junior high school reading presented by computer, results emphasized receptive rather than expressive language. To some degree the problems of phonology, morphology, syntax, and semantics identified were problems facing not only American Indians, but any students learning English as a second language. Morphology problems included American Indian use of inflections to indicate syntatic role of words, use of gender, and representation of noun modifiers by inflections in nouns. Semantic problems concerned concept development rather than vocabulary growth, particularly in color words and words concerning coercion and duty. Recommendations included providing computer practice with selected minimally constrasting vowel pairs; selected minimally contrasting consonant pairs; final consonants and consonant cluster; selected phonemes that do not exist in some American Indian languages; irregular plural noun forms; selected verb tense forms; determiners; third person singular pronouns; semantic implications of juncture; prepositions, verb-preposition combinations, and idioms; passive and wh- transformations; and basic vocabulary. (Author/NEC)

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Abstract

Results of a survey to determine the problems Native Americans, Native Alaskans, and American Indians experience with English are presented. Although the survey focused on problems amenable to solutions through computer presentations of reading, writing and language arts materials, the results should be of general interest and applicability. Recommendations concern providing practice with the following: selected minimally contrasting vowel pairs; selected minimally contrasting consonant pairs; final consonants and consonant clusters; selected phonemes that do not exist in some American Indian languages; irregular plural noun forms; selected verb tense forms; determiners; third person singular pronouns; semantic implications of juncture; prepositions, verb-preposition combinations, and idioms; passive and wh- transformations; and basic vocabulary.

What Problems Do American Indians Have With English?[1]

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This report documents a survey of available research literature. The survey was undertaken to determine the problems Native Americans, Native Alaskans, and/or American Indians, experience in learning the English language skills required for survival and success in a modern, technological culture. Over 800 sources were identified as being potentially relevant and of these about 140 were judged to be directly relevant to this survey. The nature and scope of the report are governed by its purpose, by the material available, and by some assumptions concerning American Indian students.

The nature and scope of the report are to some extent governed by the motivation for it in the first place. The survey was to guide the adaptation and development of instructional materials for elementary and junior high school reading and mathematics presented by computer. For this reason, results reported here emphasize receptive rather than expressive language--reading and listening rather than writing and speaking.

The nature and scope of the report are also governed by the quantity and quality of available relevant material. It turns out that there are very few studies that attempt to document in useful specificity and detail the problems American Indians in general, or (better) American Indians from particular language communities, have with English. Some useful sources uncovered in the survey were simply linguistic descriptions of American Indian languages or language families which could be "mapped" back onto the writer's knowledge of English to reveal dis-similarities that might prove troublesome for American Indians.

Finally the nature and scope of the report were governed by assumptions concerning American Indian students themselves. Guidance was sought to help students who either speak American Indian language in their homes or who speak one of the many forms of "Indian English." Students of the latter sort are more commonly encountered today than those of the former. For all intents, Indian English is a genuine phenomenon best viewed as non-standard, but not sub-standard, English. The varieties of Indian English are regular, generated languages reflecting the linguistic competencies that must underlie all languages. Leap (1982) described Indian English with the following summary:

* Indian English retains the phonemic patterning and phonological constraints characteristic of the community's traditional Indian language.
* Indian language grammatical rules may have priority over corresponding English language rules.
* Word formation and marking conventions in the Indian language community affect corresponding conventions in English.
* Constructions found in other non-standard variations of English (e.g. uninflected forms of to be) are found in Indian English.
* Sentence formation processes--the notions of what an utterance is and what it should accomplish--of the traditional Indian language communities are carried over into Indian English.

Penfield's 1977 article provides the best single description of the varieties of Indian English in that it covers Indian English used by Hopi, Mohave, Navajo, and Ute communities. Additional studies have been documented by Darnell (1979) for Cree, by Wolfram, Christian, Leap, and Potter (1979) for Laguna and San Juan Pueblo, and by Miller (1977) for Pima language communities.

There is ample empirical evidence that American Indians are having problems with English in schools:

1. Bebeau (1969) administered a test of English as a foreign language to 116 Sioux high school students. The Indian students performed significantly less well than the non-Indian norm group on English grammar, English vocabulary, and reading comprehension. For that matter the Indian norm group performed significantly less well than foreign students on reading comprehension.
2. Scoon and Blanchard (1970) administered a test of English as a foreign language to 142 American Indian students from all over the United States attending the Institute of American Indian Arts in Santa Fe, New Mexico. These investigators found that according to the test guidelines 82% of the Indian students in their sample should be given "some" to "considerable" English as a second language training in college.
3. Bass and Tonjes (1970) report that dropout rates for Indian students are about twice as high as they are for the general population and that only about 7% of Indian high school graduates complete college.
4. After administering the Illinois Test of Psycholinguistic Abilities to 80 Papago children, Lombardi (1970) found them to be significantly lower than the norm group on 12 of 13 subtests, the only exception being visual sequential memory.
5. Ramstad and Potter (1974) found that 21 Nez Perce kindergarten children scored significantly lower than 21 comparable non-Indian kindergarten children on measures of receptive vocabulary, receptive syntax, and expressive syntax.
6. Downey (1977) administered the Illinois Test of Psycholinguistic Abilities to 60 Flathead children and found that although the Indian

children scored significantly higher than a norm group in manual expression and verbal expression, they scored significantly lower in auditory reception and auditory memory.

7. Little, Moon, and Contraras (1980) found that 47 American Indian kindergarten children scored significantly lower than 61 Anglo rural kindergarterers on a test of auditory comprehension of language both at the beginning of the school year and after 20 weeks of school--even though both groups showed significant gains in auditory comprehension over the 20 week period.
8. Rosier and Holm (1980) reported that a sample of about 5,000 Navajo second grade students was about .7 of a grade level equivalent behind national norms on the paragraph meaning subtest of the Stanford Achievement Test and that this difference increased to a grade level equivalent of about 2.4 behind national norms in sixth grade.

Despite these results and others like them there seems little reason to attribute them to lack of mental ability. Levensky (1970) found that 1,700 Indian children who took a non-verbal test of intelligence achieved an average IQ of 101.5 which is slightly superior to the average of non-Indian children. On an earlier study completed in 1942, Havighurst and Hilkevitch (1944) administered a battery of non-verbal intelligence tests to a representative sample of Indian pupils from six tribes. These pupils scored an average IQ of 100.2; again slightly above the national average of Anglos.

Nor does it seem reasonable to attribute these difficulties to the "simplicity" of American Indian languages in contrast with the complexity of English. If anything, the opposite may be the case. Witherspoon (1977) has estimated that

there are 225 categories for classifying an object at rest in Navajo and that there are 356,200 distinct conjugations of the verb "to go"--even though the verb was limited to the ways in which humans normally "go" and did not include other ways of moving such as running or walking. In any event the simplicity, complexity, or difficulty of languages is an elusive concept at best, depending as much on the speaker's native language and what other languages he is discussing as on anything else.

As Zintz (1971) emphasizes, learning English in school is a quite different experience for any second language learner than learning his first language at home:

* Time is critical. Instead of having six years or so to learn a language the second language student may be forced into a situation where he must learn a language practically overnight.
* Speech, reading, and writing are all learned at once. Instead of first developing a solid foundation in the spoken form of the language, a second language learner in school must learn to speak it, read it, and write it all at the same time.
* Immersion is partial and artificial. Immersion for someone learning a first language is usually total. For the second language learner, immersion occurs only for a limited portion of each day in a school situation which lacks the vitality and immediacy for many children that out of school experience has.
* New ways of learning must be learned. At the same time the student is learning a second language, he must also learn new patterns of listening, repeating, and memorizing which are more focused and intense than the informal trial-and-error that worked well for the first language.

* Some unlearning is involved. Habits and practices built up in using a variety of Indian English may have to be unlearned in acquiring the standard English of school use.
* The environment is different. The school environment is less supportive, less friendly, and generally less pleasant than the home environment in which a child learns his first language.

The above, among others, are real problems American Indian students experience in learning English in school, but they are also quite general. To some degree they are problems that any population of students faces in learning English as a second language in school.

The following discussion attempts to list specific problems arising from the patterns and structure of English that at least some American Indian students experience. These problems are not unique to American Indian students, but in all cases they are problems that at least one and often more than one American Indian language community has in learning English as a second language. The principal, but not the sole, technique used here and in the survey references for identifying problems is that of minimal contrast. Minimal pairs that contrast in meaning in English, but do not in some American Indian language communities, are assumed to represent a class of linguistic items that will prove difficult for members of these Indian language communities to learn.

The discussion is divided up into problems of phonology, morphology, syntax, and semantics.

Phonology

It may be worth emphasizing, as do Cook and Sharp (1966), that many mistakes made by students learning English as a second language may be due to their not accurately hearing sounds and sound combinations that are different from or non-existent in their own language. Additionally, many errors in morphology and syntax may reflect the problems students have with English phonology. Native English speaking children also have these problems, but they live in an environment peopled by adults who speak and use English in a standard way--one that closely resembles standard English usage in schools. Generally, American Indian children do not live in such an environment.

Vowels. (1) The main problems appear to be with /ə/ as in 'cut,' /æ/ as in 'cat,' /e/ as in 'bet,' and /a/ as in 'father' (Cook and Sharp, 1966; Young, 1968; Zintz, 1971; Saville-Troike, 1974; and Edwards, 1981). Each of the six pairwise combinations of these four vowel-phonemes fails to contrast in some American Indian language.

(2) Manner of vowel articulation such as length, nasalization, and fixed/variable tonal pitch contrast in some American Indian language communities (e.g. Young, 1968). These manners of articulation can be carried over into English. For instance if a nasalized /ŋ/ follows a vowel as in seeing; the vowel in turn may be nasalized leading to mispronunciation and misspelling--'seening'--and, possibly, misunderstanding on the part of the teacher (Cook and Sharp, 1966).

Consonants. (1) Voiced and unvoiced stops do not contrast in many American Indian languages (Young, 1968; Saville-Troike, 1974). As a consequent, words

in which /p/ and /b/, /t/ and /d/, or /k/ and /g/ make a difference in meaning will cause problems for American Indian children. For that matter /t/ as it ordinarily occurs in English (e.g. 'toe') has no direct equivalent in Navajo. Instead it is /t'/ (Young, 1968).

(2) The distinction in English between voiced /θ/ as in 'thing' and unvoiced /ð/ as in 'this' seems to be a problem almost everywhere (Australian Commonwealth, 1966; Cook and Sharp, 1966; Young, 1968; Saville-Troike, 1974; Zintz, 1981; and Edwards, 1981). /ð/ does not exist in Navajo and other Athapaskan languages, and the distinction is a problem in language communities as diverse as Navajo, Papago, Alabama, Hopi, and Eskimo.

(3) /f/, /v/, /r/, /ʃ/, /θ/, and /ŋ/ do not exist in Athapaskan languages and will be especially troublesome for Navajo and Apache children (Young, 1968; Saville-Troike, 1974).

(4) Final consonants are rare in many American Indian languages (Cook and Sharp, 1966; Saville-Troike, 1974). Final consonants and especially final consonant clusters are difficult for many American Indians learning English.

Morphology

Three general problems in morphology emerged from the survey. First, American Indian languages use inflections widely to indicate the syntatic role of words. English has relatively few inflections and relies more on word order to indicate syntatic role. Second, American Indian languages use gender, and English does not. Instead grammatical implications of gender have become vocabulary issues and are represented by distinctive forms of nouns, certain pronouns, and

possessive adjectives. Third, noun modifiers in American Indian languages are generally represented by inflections in nouns, not generally by separate words preceding nouns as in English.

It may also be worth noting that the world view of American Indian communities may be reflected in their languages (or vice versa if one accepts the Sapir-Whorf hypothesis of linguistic relativity). The 356,200 conjugations of "to go" mentioned earlier can be contrasted with the minor importance of the verb "to be" in Navajo. Reichard (1944) demonstrated that a significant aspect of Navajo verbs is the idea of unrestricted motion progressing through space with only a minor reference to time. As Witherspoon (1977) says "this seems to indicate a cosmos composed of processes and events, as opposed to a cosmos composed of facts and things" (p. 49).

In any case the following specific aspects of morphology appear worth noting:

(1) There are distinct singular and plural noun forms in English, but in many American Indian languages number is implied by the verb form. Plural noun forms may be troublesome on two counts--they do not occur in the students' first language and they create final consonant clusters which are phonologically difficult for many American Indians (DuBois, 1979). The same comments also apply to possessive forms (Cook and Sharp, 1966).

(2) Tense (time of action) is more important in English than in some American Indian languages--mode (manner of acting) and aspect (kind of action) are more important than tense in some American Indian languages. One summer program to remediate language deficits among Canadian Indian children found its greatest gains, almost by a factor of two, in instruction concerning English

future tense (Mickelson and Galloway, 1969). Wolfram, Christian, Leap, and Potter (1979) found that the English tense marking system was one of the most important and complex features of English as revealed by written language samples produced by San Juan and Laguna Pueblo Indian children. In these samples, English irregular verbs were particularly difficult yielding such productions as 'buyed' for 'bought' and 'brang' for brought,' and 'spended' for 'spent.' Cook and Sharp (1966) report that third person singular present tense--'(e)s,' regular past and past participle--'(e)d,' and progressive forms and verbals ending in--'ing' are particularly difficult for Navajos.

(3) English distinguishes masculine, feminine, and neuter gender in the third person singular forms of personal pronouns, but many American Indian languages do not (Cook and Sharp, 1966; Young, 1968; Edwards, 1981).

(4) English determiners with singular countable nouns seem to be particularly troublesome. Cook and Sharp (1966) cite examples such as 'They found one in dumpyard' and 'Jack has white lamb.' Young (1968) also pointed out that in Navajo the contrastive relationship between the definite article 'the' and the indefinite article 'a' and 'an' does not exist and poses problems for Navajos who must learn English as a second language. Other American Indian languages simply do not have articles such as 'the,' 'a,' and 'an' (Edwards, 1981).

(5) Juncture is also an important issue in English and problematical for those learning it, as Zintz (1971) pointed out. Zintz cites examples such as:

'Mary was home sick.'
versus
'Mary was homesick.'

and

'Was that the green house?'
versus
'Was that the greenhouse?'

(6) Problems arise for American Indian students as they do for all non-native speakers of English in understanding correct verb-adverb/preposition constructions, or two-word verbs. Cook and Sharp (1966) cite examples such as:

'Joe talked at his grandmother.'

and

'Harry's father aimed the bear and shot him.'

(7) Prepositions in English idioms are another source of problems for American Indian and all non-native speakers of English. Examples cited by Cook and Sharp (1966) are:

'go at store'

'go to store'

'go store'

Young points out that Navajo has what might be called post-positions. For instance 'toward the mountain' would be literally translated from Navajo as 'mountain it-toward.' This construction appears to be characteristic of other American Indian languages as well (Edwards, 1981).

Syntax

Aside from discussions of morphological issues there were in the survey very few discussions related to syntatic problems in the English receptive language skills of American Indians. Two of these problems may be the following:

(1) In English the primary word order is Subject-Verb-Object; in nearly all American Indian languages in the survey it was Subject-Object-Verb. Whether or not this difference is a source of difficulty to American Indians learning English as a second language evidently remains to be determined. It does seem reasonable to expect some difficulties as readers and listeners try to distinguish between indirect and direct objects. McCarty (1980) did report that Yavapai students found English constructions to be "backward." For instance they found it difficult to construct a sentence like 'where are you going?' rather than 'where going you?' which is the literal translation from Yavapai.

(2) The passive voice in English may present a problem to American Indian students. For instance in the Navajo view of the world it is acceptable to say 'the girl drank the water' but 'the water was drunk by the girl' would be absurd--as a matter of fact it is greeted with laughter (Witherspoon, 1977). Conversely one could say 'The girl was drowned by the water,' but not 'The water drowned the girl.' Trying to deal with what must appear to be the patent absurdities of English passive and active constructions must be at least discomfiting for many American Indians.

Semantics

Perhaps the major fact worth noting about semantics is that memorizing a large English vocabulary is an essential part of learning English, or any other, language.

This does seem to be a problem for American Indians. Word lists such as the Dolch Word List are intended to be common to the receptive vocabularies of most average children of similar age and are used in studies to evaluate the language development of other-than-average children. Often such studies reveal that children thought to be educationally disadvantaged have larger reading vocabularies than expected. However this was not the finding of Kersey and Fadjo (1971) when they tested a group of third and fourth grade Seminole children with the Dolch Word List. These investigators found that there was only a 2/3 overlap of words on the Dolch list and those used by the Indian children. The set of words used by the Indian children was as large as those on the Dolch list, but the 1/3 of them that were unique may account for the depressed reading achievement scores typically seen in this population. These results were somewhat corroborated by Clifton (1976) who found that the semantic structures used by Cree junior high school students were the same as those used by their non-Indian classmates, but that the Indian students did not use the same range of words.

The problem of vocabulary development may be, as Philion and Galloway (1969) pointed out, one of concept development rather than vocabulary growth. After finding that British Columbian Indians scored significantly lower than their non-Indian cohorts on all measures of reading speed, comprehension, and vocabulary taken, these investigators undertook an item analysis of their test instruments to determine more specifically what the difficulties were with reading that their Indian subjects were experiencing. They formed concept related issues such as the following:

* Definitions assumed by the Indian students were too restrictive. 'Leaf' was assumed to refer only to the leaf of a maple tree, not

the leaves of other deciduous trees in the area. The result occurred despite the linguistic synecdoche reported by Reichard (1944) who pointed out that the same word could be used to name a medicine bundle with all its contents, the contents as a separate whole, or each part of the contents.

* Word configuration and word sounds were confused with meaning--inspiration was chosen as a synonym for vibration, growl was chosen as a synonym for howl.
* There was difficulty in identifying word roots--embrace was chosen as a synonym for bracelet.
* Environmental influences caused some confusion--hymn was chosen as a synonym for miracle.

Special work on vocabulary and English idioms might be expected to produce achievement gains among American Indian populations, and this seems to be born out by research. Richards (1970) demonstrated this pay-off fairly well with 4th, 5th, and 6th grade Indian students.

Two special semantic categories have received attention in the research literature and probably deserve mention here:

(1) Color words. Both O'Neale and Dolores (1943) working with the Papago language and Young (1974) working with Navajo observed a paucity of terms for the varieties of color. This lack may not be so much due to an absence of color or of seeing color in the surrounding world as it is to a world view that seeks to harmonize and synthesize elements of the world rather than separate and analyze them.

(2) Words concerning coercion and duty. As Young (1974) points out, Navajo Indians among others do not have the notion of compelling necessity or of the imposition of will implicit in English notions of 'have to' or 'make to.' Rather than say 'I must go there' a Navajo would say something more accurately translated as 'It is only good that I shall go there.' Rather than say 'I make the horse run' the equivalent Navajo statement would be more like 'The horse is running for me.'

Recommendations

On the basis of the foregoing, what recommendations can be made for computer presentation of English language instruction to American Indian students? The strength of computer presentations appears to be in their almost infinite capacity to provide practice that is:

* entertaining, motivating, and interactive.
* perceived to be culture-fair and private.
* easily transported and exactly reproduced.
* individualized on an item to item basis.

Given these considerations and the survey documented above, it seems reasonable to recommend that computer presentations to American Indian children for instruction in receptive English language skills provide the following:

* They should provide practice with selected minimally contrasting vowel pairs. Based on studies by Cook and Sharp (1966), Young (1968), Zintz (1971), Saville-Troike (1974), and Edwards (1981), practice using both computer text and audio capabilities should be provided with the following vowel pairs:

/ɔ/ - /æ/

/ɔ/ - /e/

/ə/ - /a/

/æ/ - /e/

/ɔ/ - /a/

/e/ - /a/

* They should provide practice with selected minimally contrasting consonant pairs. Again based on studies by Cook and Sharp (1966), Young (1968), Zintz (1971), Saville-Troike (1974), and Edwards (1981), practice using both computer text and audio capabilities should be provided with the following consonant pairs:

/p/ - /b/

/t/ - /d/

/k/ - /g/

/ð/ - /θ/

/f/ - /v/

* They should provide practice with final consonants and consonant clusters. The final consonant clusters of English are too numerous to list here, but based on studies by Cook and Sharp (1966), Saville-Troike (1974), and DuBois (1979), practice using computer text and audio should be provided with final consonant clusters including those that arise from English plural and possessive forms.

* They should provide practice with phonemes that do not exist in some American Indian languages. According to Young (1968) and Saville-Troike (1974), the following phonemes do not exist in Athapaskan languages: /f/, /v/, /r/, /ʒ/, /θ/, and /ŋ/.

* They should provide practice with plural and singular noun forms. Since, as DuBois (1979) pointed out, many American Indian languages do not employ different singular and plural noun forms, practice with these forms, particularly the irregular forms ought to be provided.

* They should provide practice with verb tense forms. Cook and Sharp (1966), Mickleson and Galloway (1969), and Wolfram, Christian, Leap, and Potter (1979) all reported problems with English verb tense forms. English irregular forms should be emphasized along with--'(e)s,'--'(e)d,' and--'ing' endings.

* Practice with English determiners should be provided. As Cook and Sharp (1966), Young (1968), and Edwards (1981) pointed out, count nouns with 'the,' 'a,' and 'an' in which definite versus indefinite determiners are contrasted cause considerable problems for American Indian students.

* Practice with third person singular pronouns should be provided. Cook and Sharp (1966), Young (1968), and Edwards (1981) all reported difficulties as American Indian students attempted to distinguish among masculine, feminine, and neuter gender in the third person singular.

* Practice with the semantic implications of juncture should be provided. Zintz (1971) indicated juncture as a problem for American Indian students, and contrastive exercises using computer audio to show the semantic implications of juncture should be included.

* Practice with prepositions, verb-preposition combinations, and English idioms should be provided. Studies by Cook and Sharp (1966), Richards

(1970), and Edwards (1981) all indicated the value of this type of practice.

* Practice with passive and wh- transformations should be provided. Witherspoon (1977) and McCarty (1980) indicated these as problems for American Indian students.

* Basic vocabulary practice ought to be provided. Studies by O'Neale and Dolores (1943), Philion and Galloway (1969), Richards (1970), Kersey and Fadjo (1970), Young (1974), and Clifton (1976) all point to the value of this type of practice.

In summary, it is surprising to find how little specific and directly applicable information exists on the problems American Indian children encounter in learning English as a second language in school. Because of the range and varieties of American Indian languages--and of 'Indian English'--the question itself may be no different than asking what the problems are that anyone has learning English as a second language. In this case, and given the basic nature of the question, one would expect to find many more studies than there are that discuss the difficulties speakers from specific American Indian language communities experience in learning English as a second language. These comments are not intended to denigrate the quality of work that does exist. More than three times the number of studies referenced here were examined in making the survey and were discarded for being too vague or otherwise lacking in quality. However, this ratio may be about right. It is not uncommon to find a ratio like this in other areas of study. Moreoever, it should be emphasized that, contrary to current inclinations to bemoan the state of research in Indian education, many

of the studies reported here were thoroughly impressive for their breadth, depth, and high standard of scholarly professionalism. They would be a credit to any area of study, including Indian education.

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Footnote

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